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Creating an Orbital Economy

From this day forward, all NASA launch vehicle research and development programs must have as their goal the creation of an orbital economy, rather than the construction of a vehicle to meet government-specified requirements.

An old argument for supporting the space program is that all the dollars are spent here at home. It's time to be free of this limiting perspective and envision a fully functional orbital economy that is an extension of our nation's marketplaces.

It should be an economy comprised of both private and public sector activity and an economy inhabited by passengers on sub-orbital and orbital flights, visitors to orbiting hotels, scientists at government and university laboratories, and corporate workers maintaining space solar power arrays owned by electrical utilities beaming energy to Earth.

When NASA adheres to the vision expressed in NASA Administrator Sean O'Keefe's biography ("... NASA seeks to advance human exploration and use of space, develop and exploit advanced aeronautics and space technologies, and advance scientific knowledge about space," www.nasa.gov/bios/okeefe.html), all this and more will happen in an orbital economy that NASA's unique talents can help create.

An orbital economy sustained by a commercial launch industry enabled by NASA research work

will accomplish these goals by reducing launch costs. NASA can then focus on its strengths: research and development that can be used by the private sector, science in orbit and unmanned exploration of the solar system. A NASA completely freed from the routine of operating space trucks will be able to focus on such exciting accomplishments and regain the support and respect of the nation.

None of these goals require the government-controlled development of a government-owned, next-generation space shuttle.

The government's own declaration of its support for the private sector further validates this approach. An Office of Management and Budget Circular No. A-76, (revised 1999) states: "In the process of governing, the Government should not compete with its citizens. The competitive enterprise system, characterized by individual freedom and initiative, is the primary source of national economic strength. In recognition of this principle, it has been and continues to be the general policy of the Government to rely on commercial sources to supply the products and services the Government needs."

The statement in O'Keefe's biography and the Office of Management and Budget Circular provide the yardsticks by which NASA's efforts must be measured. The result will be an American economy expanded hundreds of miles up.

How does NASA's new Space Launch Initiative (SLI) program fit this scenario of public-private sector synergy? In its present form — likely to deliver an expensive and fragile vehicle unwanted and unaffordable by the private sector — it doesn't. It sounds more like space shuttle two.

Instead, why not transform NASA into the invaluable agency it once was, where it will be an enabler of American economic growth in the Earth-moon area and an intrepid explorer of the far frontier? At the same time, why not unleash American market-oriented capitalism within the financial and regulatory framework provided by the government?

We already know how to do this and we know what model SLI should follow and what the results can be. The history of NASA's precursor, the National Advisory Committee for Aeronautics (NACA), provides the necessary insight. The development of

a nascent commercial aviation sector was greatly supported by federally-funded research and development.

Consider NACA Report 18, "Aerofoils and Aerofoil Structural Combinations," written by E. S. Gorrell and H. S. Martin in 1917. Or NACA Report 7, "Thermodynamic Efficiency of Present Types of Internal Combustion Engines for Aircraft," written by C. E. Lucke in 1917.

These were not government efforts to own and operate a fleet of aircraft, this was research available to the private sector, for the creation of aircraft by the private sector, to be owned and operated by the private sector and used by paying customers.

The result was one of the largest industries in our economy that is crucial to a broad array of activities.

It is quite easy to dismiss the notion of an orbital economy, and many will undoubtedly banish the idea to the realm of science fiction. And yet, science fiction has accurately predicted accomplishments that were once ridiculed.

In 1968, one year before that immortal first step on the moon, a step made possible because of great presidential vision, the

movie "2001: A Space Odyssey" premiered. In that movie was another equally powerful American vision, capitalism in space. The vehicle that carried passengers — passengers, not astronauts — to the space station had the logo of Pan American World Airways emblazoned on the tail. The American and Russian scientists met at a Hilton hotel on the station.

In 1971, during the height of the Apollo program, the less well-known movie "Silent Running" similarly emphasized off-Earth capitalism by depicting American Airlines cargo carriers in orbit. Significantly, while a massive government program captivated the nation and the world three decades ago, Americans saw that capitalism is a normal part of space. Yes these were movies, but the idea was powerful.

SLI, as currently planned, will not raise a commercial launch industry and lead to an orbital economy, and it should be restructured with these goals in mind. What markets can be created? How can the private sector assume responsibility? How will a thriving launch industry turn science fiction into science fact? And, how should NASA modify its requirements to enable this new orbital economy?

These are the questions we should all be asking — and answering.

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